



ZOOLOGICAL REF



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ZOO GOER

Volume 8, Number 3
May-June, 1979

4 How to Take a
Child to the Zoo
by Sally Tongren

9 A Tale of
Two Lizards
by Bela Demeter

13 The Scimitar-
Horned Oryx
by Karl Kranz and Katherine Ralls

16 ZOONEWS

18 FONZNEWS

21 BOOKNEWS

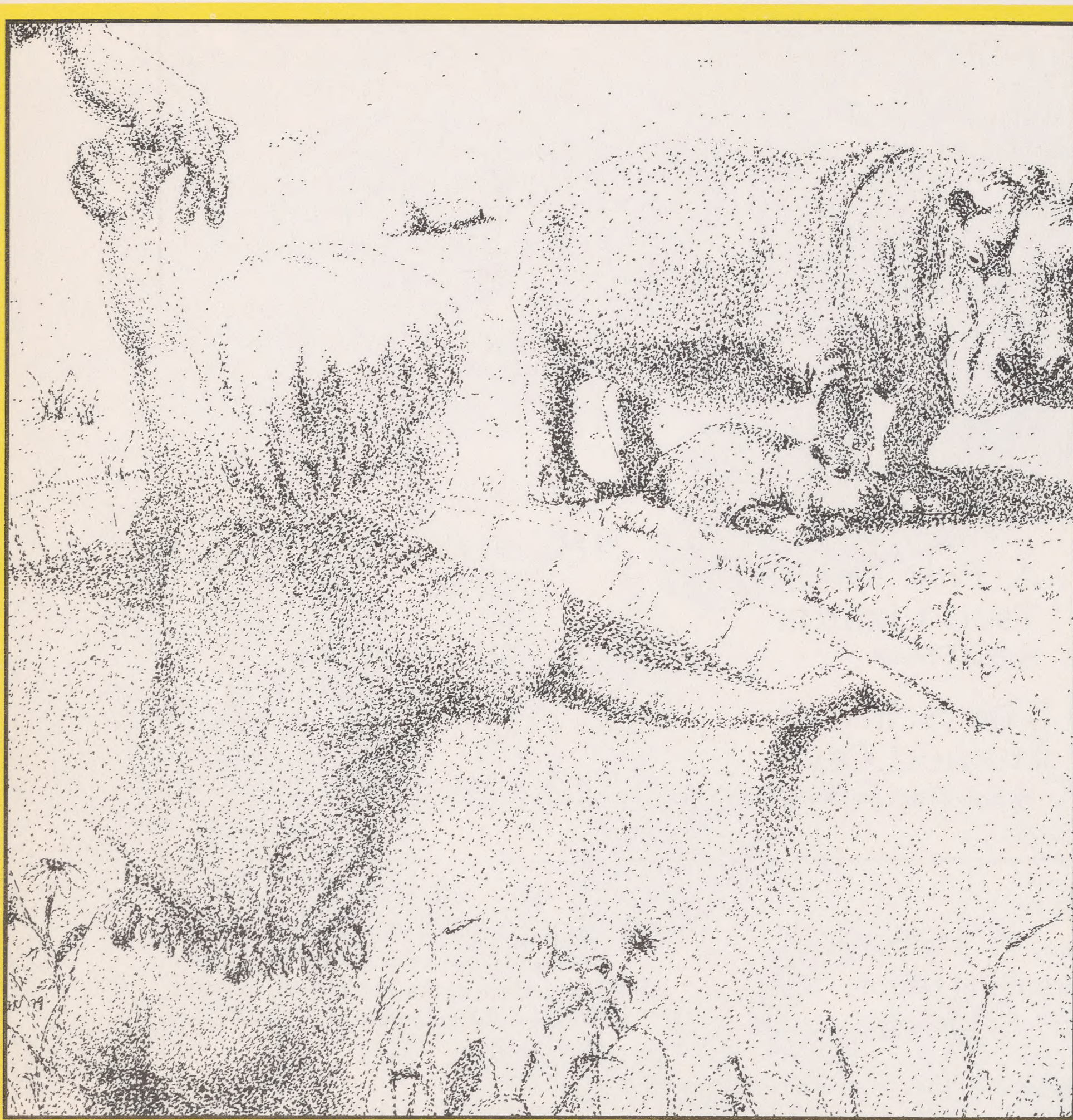
22 Calendar

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FRONT COVER: Seeing wild animals on television is one thing. Meeting them face to face at the Zoo is quite another! Who would have thought a giraffe was that BIG?!

PAGE TWO: An oryx calf, like a human baby, is born after a gestation of nine months. Both sexes have horns. This two-week old female calf is already sprouting buds.



Zoo babies are a special delight to human young. In this drawing, the child is looking at a Nile hippo calf and her mother.

How to Take a Child to the Zoo

Sally Tongren

Parents often ask FONZ how to make family trips to the Zoo more meaningful. Naturally, nothing ruins a good family outing faster than trying to make it an "Educational Experience." But if you plan ahead, you *can* sometimes slip in an idea or two when your child isn't looking!

Here are a few general guidelines that the FONZ volunteers have developed while taking thousands of children through the Zoo each year. We've had a lot of fun doing this, and we hope we can help you and your child share the excitement and laughter we have known.

First, come in the "off" season! Fall weekends are lovely, and winter days surprisingly nice. Or come on weekdays if you can. You won't be hurried or pushed, small children can see better, and you can watch a favorite animal to your hearts' content. The only day the Zoo is closed is Christmas.

Don't make it too long a trip. Select one area, such as birds or lions or monkeys; and finish with a picnic. You might want to decide what you're going to look at in advance and talk over what you'll be seeing before you come. This is a very effective approach,

SALLY TONGREN has been a FONZ guide since 1971. She is an expert on birds, ecology—and children.

though not necessarily the best for you—you will be the best judge of your interests and your child's. Trust yourself.

A warning, though—if you try to see the whole Zoo at once, you'll find that suddenly there is twice as much walking to do uphill as down! You'll have sore feet, and your child will remember nothing but being tired. If you have come some distance and feel that you must make a day of it, at least take frequent breaks.

What should you try to teach? Or should you try to teach factual material at all? Again, this is an individual decision and depends on the extent of your knowledge and your child's interests. Facts, however interesting, do seem to slide right by excited children. You might do better to follow up your trip with reading from some of the excellent books in your local public library, rather than trying to compete with the animals for your child's attention.

What you can only do at the Zoo is to help your child learn to see. If you polled the experts, from the Zoo's director down to the individual keepers, one message would be clear: *the most important thing that your child can learn is to look at and really see what is before her or him.* Such observation, of course, isn't limited to sight—help your child not only to look, but also to listen and even smell.

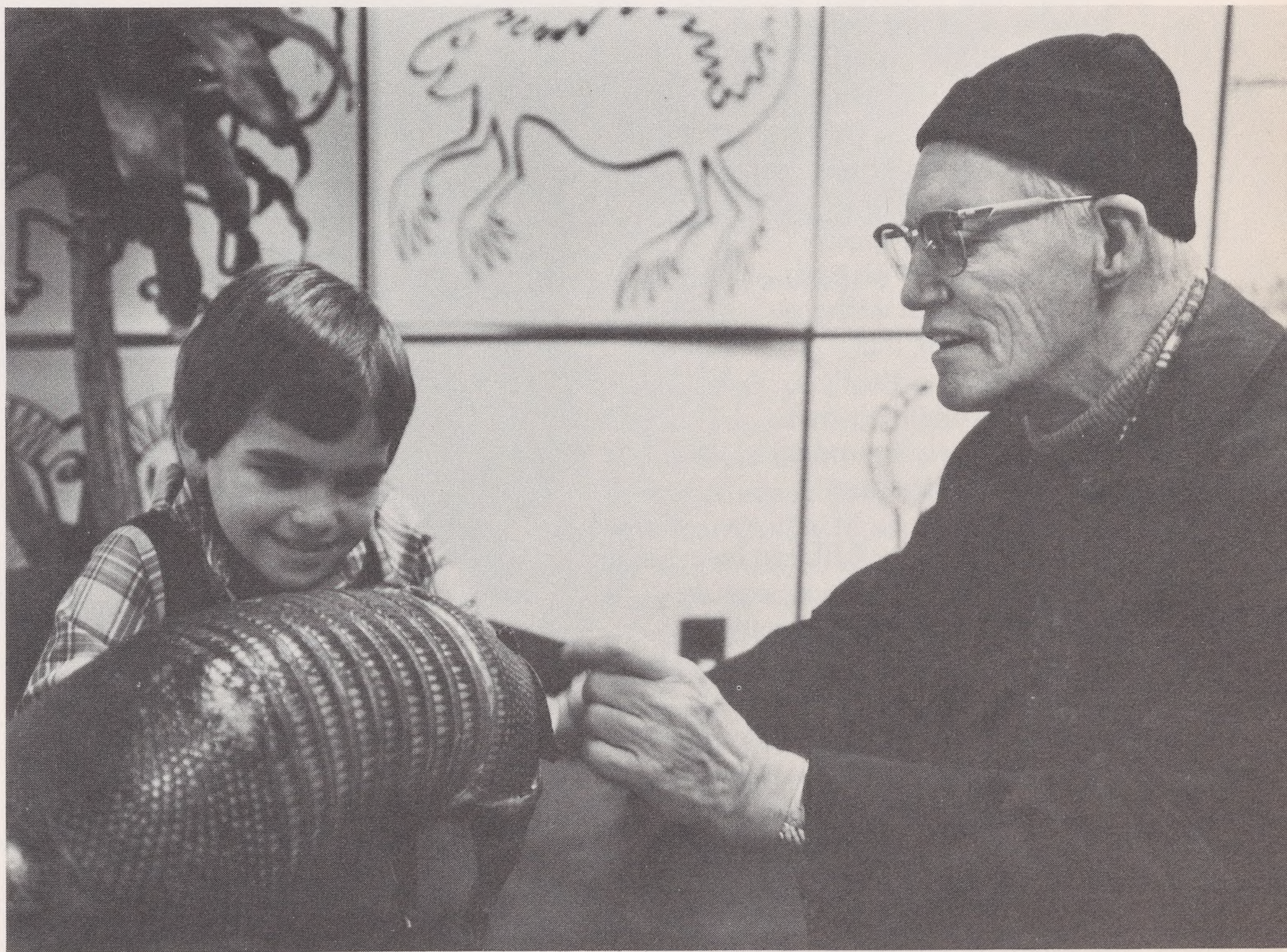
Children tend to rush from one animal to the next, but they are also extremely observant and not hampered by preconceived ideas. Try to slow them down with special animals that catch their eye or yours. You are going to have to be more observant, too. Ask questions. What is the animal doing?

Why do they suppose it's doing that? Why does this animal have stripes when a similar animal doesn't? Look at what the animal is eating. Why does one animal eat meat and another only grass?

Don't worry if you don't know the answers yourself. Speculate on them with your child. It's fun, and you'll be surprised at what good answers you get; even those that sound silly are sometimes startlingly close to the mark. Remember that almost every way an

animal is shaped and everything an animal does has a good reason behind it. Also remember that the whole basis of scientific thinking is to pose questions for which you don't have answers and then look for possible explanations. Children who are encouraged to do this learn to think creatively, not just memorize.

I suspect that many of us as parents and grandparents had more contact with country life than our children do. We don't realize how strange the



At Zoolab, children and adults can learn—and have fun!—together. That's a real (though stuffed) armadillo these visitors are touching. Zoolab is

full of animal touchables and also has books, learning boxes, and other educational materials.

animal world and its sounds and smells are to them. This is why FONZ guides stress adaptations and behavior—the ways in which animals meet their needs for food, shelter, protection from enemies, and contact with their own kind. Children often don't even realize that animals *have* these needs. These wonderful adaptations are what a Zoo tour is all about; your questions can start your child thinking just as well as ours can.

If you see a group of animals in action, stop and watch. Monkey groups are often active, and you can point out that they are doing definite things: grooming, eating, playing, caring for their young. See if you can spot how members of the group communicate with each other, and even with you. If children see that animals have activities and needs like their own, they are likely to understand and appreciate them better.

Zoo people don't like to be anthropomorphic about animals: the little-people-in-fur-suits approach is usually incorrect and always insulting to an animal's dignity. But young children in particular relate best to what they know, and there's nothing wrong with presenting animals in familiar terms—that is the mother, this is the father, etc.

It is important for children to realize that animals have feelings. Moreover, for children to realize that an animal's sense of fear or love or anger is different from theirs is less

important than for them to know that animals *do feel* these emotions. This understanding can go far in preventing unintentional cruelty.

Even explaining the Zoo's regulations can be used to present these concepts. For example, you can explain to your child that visitors to the Zoo are



The magic and mystery of a zoo are nowhere so apparent as in the rapt eyes of a spellbound child.

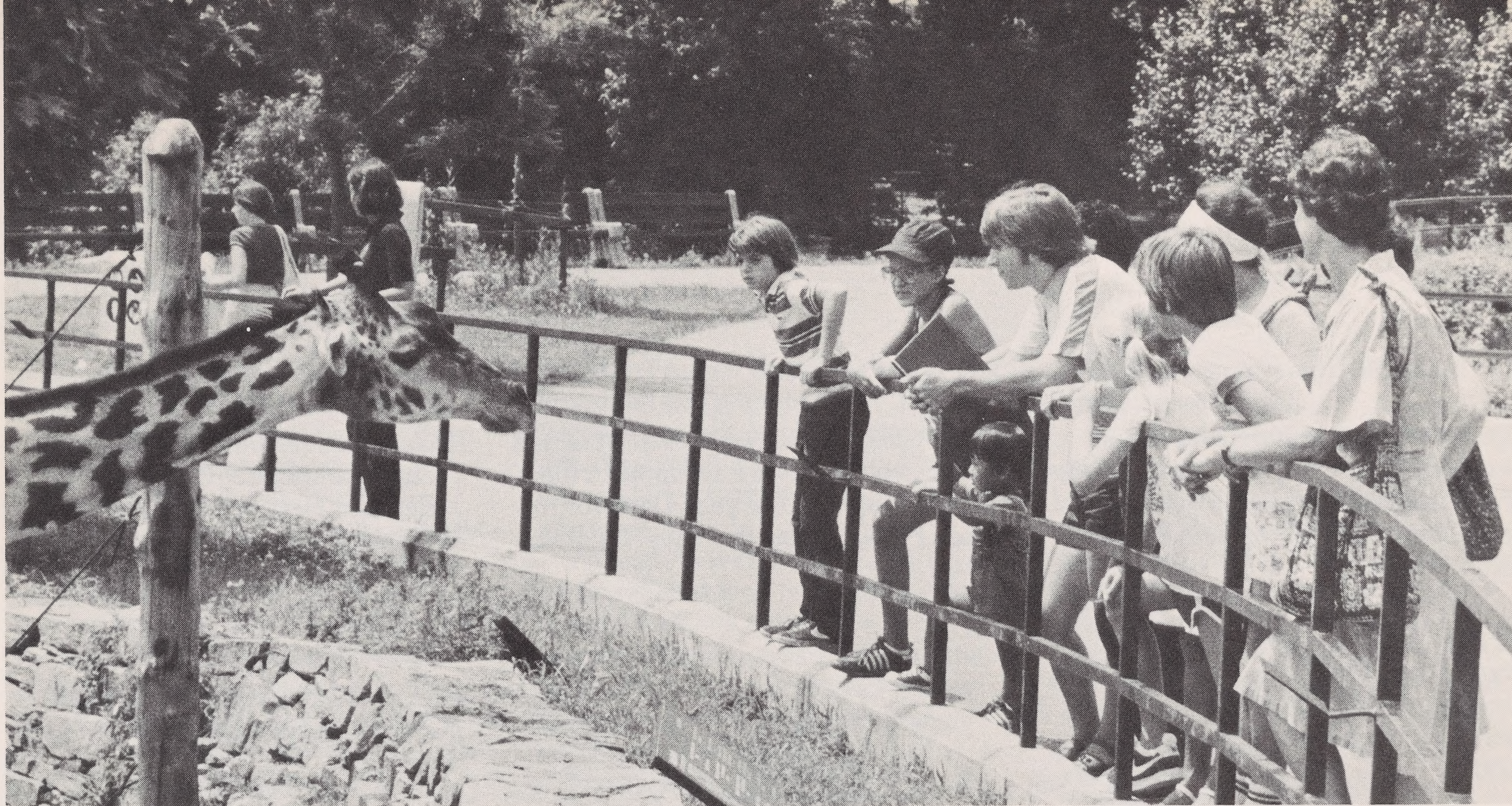
asked not to feed the animals because they eat different foods than we do. Each animal eats the food best suited to it. Popcorn or candy might actually hurt the animal. You can slip in this lesson while playing "Let's guess what

this one would eat." If you are in the Bird House at feeding time, about mid-morning, it's a wonderful chance to see how many different things birds eat.

Along the same lines, you can explain that humans aren't allowed inside guard rails because an animal's enclosure is its home and the animal would be frightened by uninvited guests. Children shouldn't think of animals as a kind of people—but they *should* get the sense that animals are living, breathing, feeling individuals with the same kinds of rights that people have.

You want to keep it light, of course; you are out for fun, after all. Young children may enjoy seeing in person the animal friends they've read about in their favorite books. Rikki-tikki-tavi is here at the Zoo; so are Mowgli's wolves. (Don't forget to mention to your children that wolves aren't wicked; they have the worst press in the animal world.) The European brown bear is one of the characters from the Goldilocks story. At the Zoo you can find a goose that might lay a golden egg, and the swans often have "ugly ducklings." There are Kangas and Tiggers and sometimes a Roo, and everyone wants to see Smokey Junior.

On the other side of the coin, though, is the care you must take to distinguish between fact and fantasy, wildness and tameness. Children who are strongly attracted to animals are often misled by the friendly bears,



If your youngster is a budding expert on animals, let *him* take *you* to the Zoo. You'll be amazed at how much you learn—and how much you enjoy yourselves!

tamed lions, and amiable monkeys that they see on television. They feel that they could go and pat a bear, and the bear would react the way Yogi Bear would react—that all lions are related to the Cowardly Lion.

You can help your child understand that wild animals are dangerous—not in the sense that they are biding their time waiting for the chance to attack, but that almost all wild animals have a strong and very necessary fear of human beings that keeps them always on the defensive. Tell your child that to each animal, “manners” mean something different—that what to us is a friendly gesture may to an animal be a threat that it has to defend itself against. This is especially important with bears, which your child might

well encounter when your family is on a vacation. The tame bears on television are *not* the animals one will encounter in the wild. “Tame” bears like Gentle Ben are either tall stories or the result of long and patient work by exceptional people under unusual circumstances. Helping your child learn the difference between human and animal “manners” may help him or her appreciate the work of the people who study animal behavior—perhaps even inspire a career.

If your child is a real zoo buff, perhaps a budding herpetologist, let the child take *you* around the Zoo. You may be amazed at the knowledge children can absorb on their own. Many children around ten or twelve have a terrific knowledge of turtles or birds. All you'll need to do is make encouraging noises—and learn!

Above all, you, better than anyone else, can show your children that animals should be treated with respect for their true capabilities. The children who learn today to admire and understand animals, to know that each has a place in the natural world and specific needs, will be better equipped to evaluate some of the decisions on conservation that will be part of their lifetime. It is important that you explain what “extinction” is; a great many children confuse it with “endangered.” They need to know that extinct means dead, gone, lost, totally and forever. Ended.

Children are great fun to go to zoos with—so perceptive and so fresh in their insights that your trip will be a joy to all concerned. □

Getting the Most from the Zoo

Resources and Information to Make Your Trip More Enjoyable

Zoolab—Family oriented, hands-on learning. Books and recent happenings. In the Education/Administration Building. Open Tuesday through Sunday, 12:00-3:00 p.m.

Birdlab—Similar resources. In the Bird House. Open in summer, Tuesday through Sunday, 12:00-3:00 p.m., in winter Friday through Sunday, same hours.

Brochures—Informational and family game material are available free at both Zoolab and Birdlab.

ZooGoer and PawPrints—Good sources of information as well as entertainment. Keep your back issues to consult before coming to see something special.

Animal Demonstrations—

Beaver Valley: Usually in the early afternoons.

Elephants: First thing in the morning and in the early afternoon.

"Mingle with the Monkeys": Usually around 3:00 p.m.

"Meet a Reptile": 10:30 a.m. and 3:30 p.m.

House Guides and Roving Guides—Trained FONZ volunteers are available in the Park throughout the year. Look for the black FONZ badge that says "GUIDE."

Feeding Times (all times approximate)—

Giant pandas: 9 a.m. and 3 p.m.

Elephant House: 3-3:15 p.m.

Monkeys: 10 a.m. and 3:30 p.m.

Birds: Usually in the morning.

Strollers—May be rented at stations near the giant panda exhibit and Lion-Tiger Hill.

First Aid—Available at the Police Station next to the Mane Restaurant.

If you think your child's class would enjoy a guided tour of the Zoo, be sure that his or her teachers are aware of the educational programs offered by FONZ and the Zoo. All of the schools in the Washington, D.C., area receive FONZ tour information, but it sometimes doesn't reach all the teachers. Scout troops and other non-school groups can also be accommodated with enough notice. Late fall and winter are especially good times for tours. Call (202) 232-7703 for information and reservations. □



A Tale of Two Lizards

Bela Demeter

When you visit the Reptile House, what is the first thing you look for?

Chances are you head first for the giant tortoises, the crocodilians, or the snakes. If snakes are your interest, then it's a good bet you'll be most fascinated by the venomous ones or the larger varieties, like pythons and boa constrictors. You may have heard of the Komodo dragon and would, understandably, like to see one. The National Zoo hasn't had Komodos for a few years, but their relatives, the large monitor lizards, are almost as impressive, reminding visitors of what dinosaurs may have looked like.

Like many people, you may pass over the rest of the reptiles because

BELA DEMETER is a keeper at the Reptile House. He has been in charge of lizards for the six years he has been at the National Zoo.

you don't realize that there's anything very interesting about them. Take the average small lizard, for example: it's got a body, tail, two eyes, four legs. Once you've seen one, you've seen 'em all, right?

Wrong! As with most things, if you know what to look for with lizards, you'll discover a whole new set of perspectives. Let's compare a few of the more obvious characteristics of two lizards in the Reptile House, and you'll see what I mean.

The lizards we're looking at are in adjoining cages, A-1 and A-2, just to the right of the main entrance to the Reptile House. Both are small, active, and highly visible. Both are in the family *Iguanidae*. The crevice spiny lizard, *Sceloporus poinsetti*, in A-1 is a perfect counterpart to the two species of anoles in A-2, the green anole

(*Anolis carolinensis*) and the brown anole (*Anolis sagrei*).

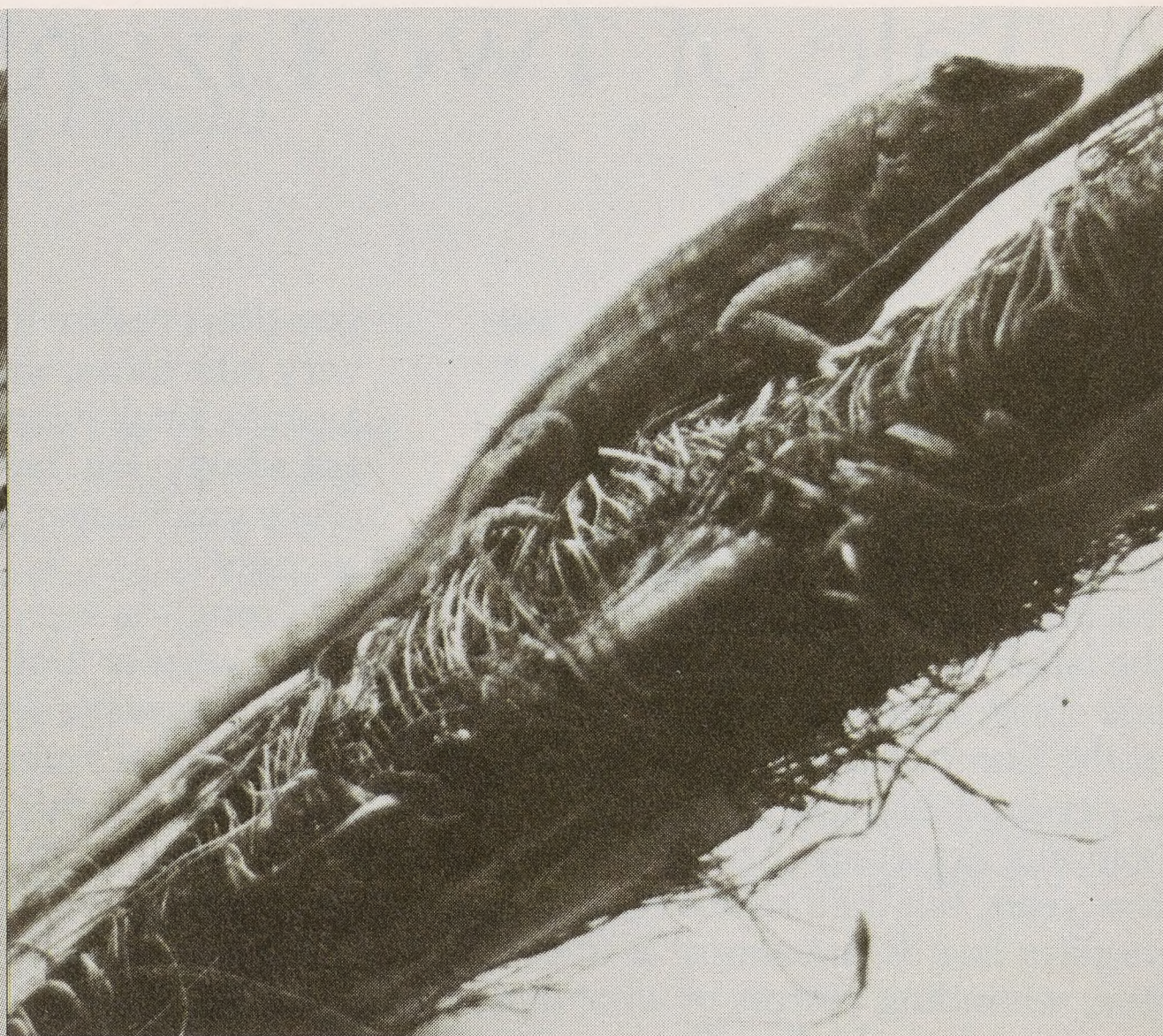
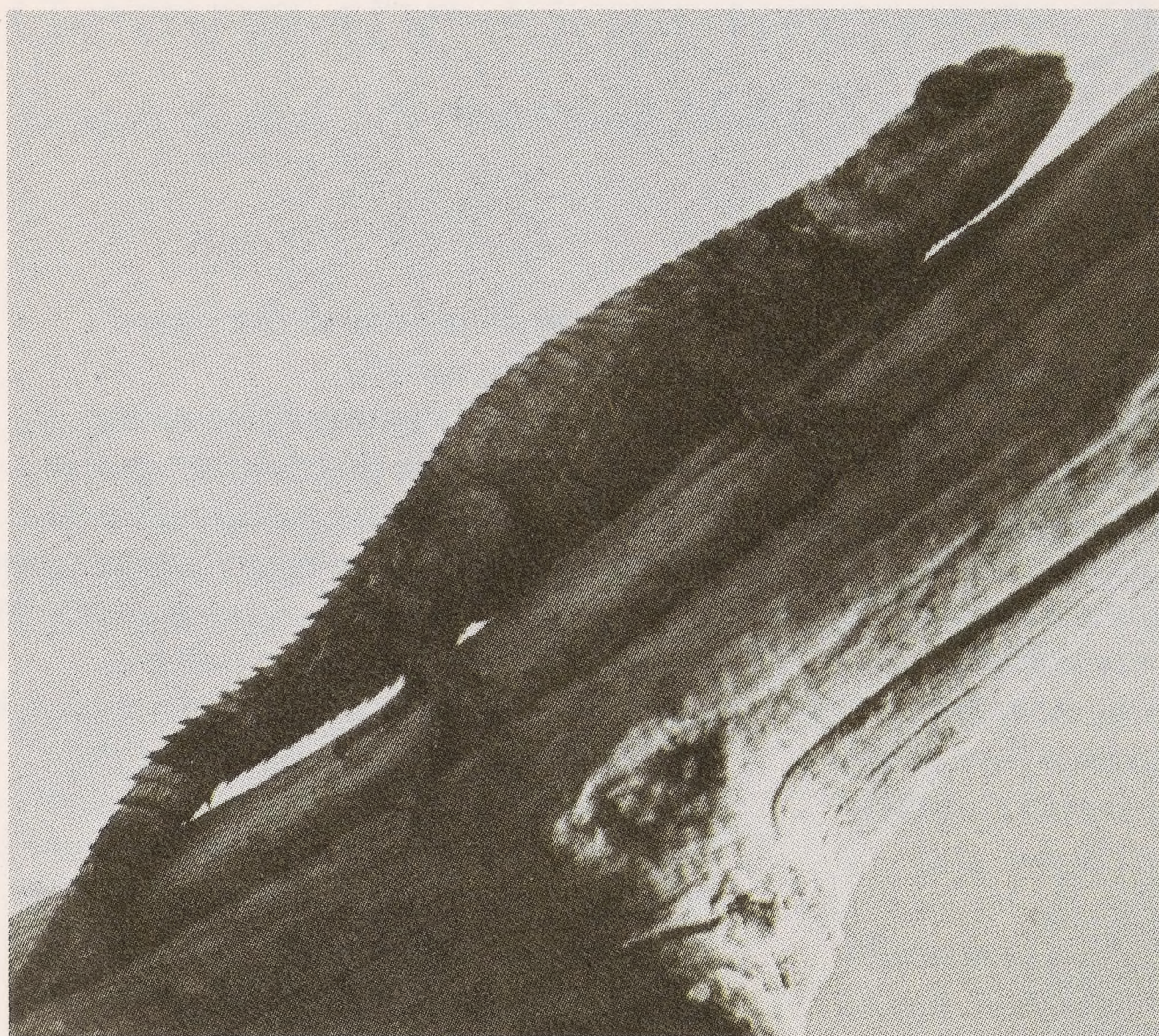
Sceloporus is a genus of iguanids with a very wide distribution in the western hemisphere, particularly in Mexico. The crevice spiny lizard comes from Mexico and the American Southwest. It is a desert dweller and is generally terrestrial, although it spends a lot of time in trees and low shrubs.

Anolis is a tropical and subtropical genus, also found in the western hemisphere; but unlike *Sceloporus*, it is almost completely arboreal.

Several characteristics, such as their diet, eyes, and tails, are common to both lizards. Because they are both small, they both live primarily on insects. Although in the wild each has a varied diet, at the Zoo both species are mainly fed live crickets that have been powdered over with a



The brown anole is one of several lizard species that, like chameleons, can change color. There are 165 species of anoles.



Both the crevice spiny lizard (left) and the brown anole (right) are small, active,

and highly visible. The crevice spiny lizard comes from deserts, while anoles

may be found in the tropics and sub-tropics.

vitamin-mineral supplement. Anoles will also lick the juices from fruits and berries, so their diet is supplemented with a honey-flavored vitamin liquid. You can watch these lizards being fed on Monday and Thursday afternoons.

If you look at them closely, you can see that the pupils of both the crevice spiny lizards' and the anoles' eyes are round, like ours. This is typical for diurnal animals. Many reptiles, though, are primarily nocturnal. Such reptiles have developed an elliptical pupil, like a cat's, which can close more tightly in bright light.

Both the crevice spiny lizard and the anole have tails that can break off at any number of points and regenerate. Many other small lizards

have similar tails; these help them avoid predation. The tail's separation points lie through the vertebrae. The cleavage planes extend to the skin, fat layers, and muscle tissues, so that the break is complete and does as little harm as possible. For example, thick-walled areas in the tail's artery act as sphincters to keep bleeding to a minimum in case of a break.

You can quickly tell which of the lizards on display at the Zoo have had their tails broken at one time or another. The new tail has a different scale pattern, since a regenerated tail never grows back to be exactly like the original.

Notice, too, how the greens and browns of the anoles' skin blend in with the foliage in their cage. Imagine how much more difficult it would be

to see them in the denser leaf cover they have in the wild!

Anoles are one of several species of lizard that, chameleon-like, can alter their body color to match the surface on which they rest. In fact, the green anole is more commonly known as the American chameleon. Blending in with its environment is not the only reason for a lizard to change colors. The color change may be activated by such conditions as temperature, stress, interactions with other lizards, and the state of the lizard's health.

The crevice spiny lizard, unlike the anole, cannot change color. However, the browns, reds, and tans of its skin

form a pattern that camouflages it nicely in its desert environment. Camouflage is an important part of any reptile's defense strategy—which is one reason you won't often see a reptile "blowing its cover" when it doesn't have to.

The crevice spiny lizard has some other adaptations that help it survive in the harsh climate of the desert. Notice the keeled, pointed scales that give this lizard its name. These scales disperse the rays of the sun, refracting rather than absorbing the heat—an obvious advantage. Not as noticeable

are its toes, which are slightly fringed underneath. This enables the lizard to scurry over loose sand without sinking.

The crevice spiny lizard's reproductive behavior is also geared to desert life. Eggs are laid in clutches of six to twelve and buried in moistish sand, secluded from the direct rays of the sun, where the probability of hatching will be high. During periods of severe drought or curtailed food supply, the male's sex organs will not develop fully enough for reproduction. This prevents fertilization during a time

when the young might not survive.

Because of the tropic's more favorable climate, young anoles may have somewhat better odds of reaching adulthood than young crevice spiny lizards do. Consequently, anoles lay an average of only two eggs—one per adult female ovary. Nor are they both laid at once; the second egg follows the first after about two weeks. The eggs are generally deposited aboveground in some sheltered spot, such as a clump of vegetation, in the cracks between tree bark, or among the leaves of a bromeliad plant such as the ones you

Left to right, the brown anole, the crevice spiny lizard, and the green anole.



see in cage A-2. (Bromeliads, for example pineapple trees, are tropical-type plants whose leaves hold water well.) In fact, most of the eggs that have been retrieved from the anoles' cage have been found stuck to the inner leaves of these bromeliads, just above the water line.

The anole is as well adapted to living in the trees as the crevice spiny lizard is to running around desert rocks and shrubs. Note the anole's lighter body and its relatively longer tail, both of which give it greater stability in tree branches. The anole's most interesting adaptation, of course, is its feet. Its toes are flared to form a pad under which are rows of thin, flat membranes like scales or gills, called lamellae. These lamellae in turn are studded with rows of microscopic projections that act like little barbs to catch the irregularities of what seem to us smooth surfaces. This allows the lizards to walk up and down smooth tree trunks, walls, and even glass.

If you're lucky, you might have a chance to see these lizards communicating with each other. Both the crevice spiny lizard and the anole use a system of head bobs and body "pushups" to convey any number of messages concerning territoriality, aggression, or courtship. The duration, combination, and sequence of these movements are usually stereotypical and different for each lizard species. For example, the arrangement and rhythm of the series of head bobs that two lizards exchange might determine whether they will mate or go their separate ways. An incorrect response to a



The dewlap, a brightly-colored fan of skin at the throat, is generally well

developed only on male anoles. It is used in aggressive or amorous displays.

male's advances would indicate to him that the other lizard either isn't a female or isn't a female of his species.

The anole also has a brightly-colored fan at its throat, called a dewlap, which you wouldn't notice unless it were extended. The dewlap is generally well developed only on males; it is another way males can communicate to other males and to females. The dewlap is usually red or orange, and is conspicuous among the greens and browns of the lizard's habitat. It is a very important cue for a reptile as visually oriented as the anole is.

As you walk through the Reptile House, keep some of these characteristics in mind and see how they appear on other lizards. Each variation is that lizard's adaptation to its own environment. Now that you know some of the things to look for, you will be able to see more; and, seeing more, you will take much more pleasure in the infinite adaptability of nature. You're sure to leave with a greater appreciation for lizards than you may have had when you walked in. □

The Scimitar-Horned Oryx

Karl Kranz and Katherine Ralls

The scimitar-horned oryx is native to a semi-desert fringe of the Sahara called the Sahel that covers several North African countries. It has not been studied as intensively as the antelopes of East Africa, so of the three species of oryx, it is the least known.

The most common species, *Oryx gazella*, is the oryx usually seen by visitors to Africa; it includes such subspecies as the beisa and fringe-eared oryx and the gemsbok. The rarest species is the Arabian oryx, *Oryx leucoryx*, which was once hunted almost to extinction but has been breeding very successfully in captivity. The scimitar-horned oryx, *Oryx dammah*, is on display at the National Zoo. *Oryx dammah* is the only species of oryx with curved horns; both sexes have them.

Scimitar-horned oryx are found in herds of varying sizes, depending on the season. The basic social unit seems to be a herd of twenty or less, although herds may have been larger when oryx were more common. Smaller herds may join together into large droves (travelers formerly reported bands of up to several thousand) at times, particularly during migrations.

KARL KRANZ has been a FONZ curatorial intern for one and a half of his two years with the Zoo, and is studying antelopes, in particular dik-diks, in mother-baby relationships. KATHERINE RALLS has been a research zoologist at the Zoo for three years, and is studying mammalian social behavior and morphology.

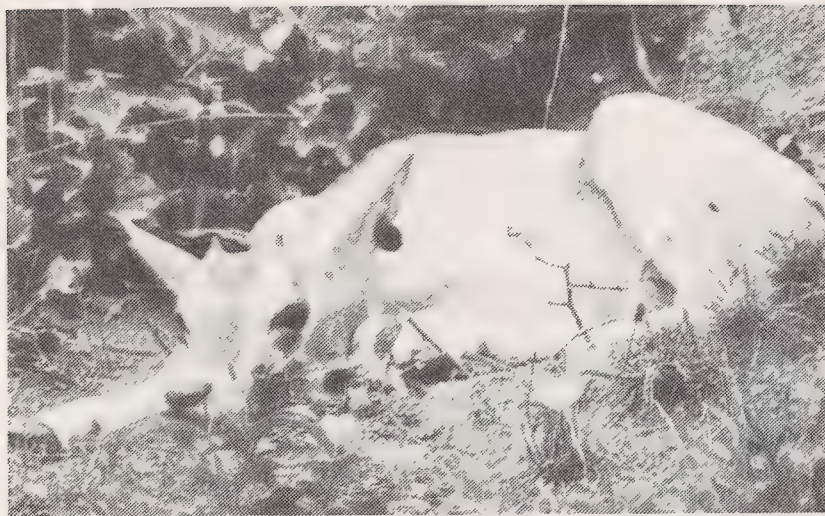
The species is known to be migratory, though different populations may have different migratory patterns. One common pattern seems to be for the animals to go north after the summer rains, then south beginning in about March. The scimitar-horned oryx is not adapted for life in the true desert, so it migrates during times of drought

as well. A recent drought in the Sahel forced the oryx to migrate south of their normal limits, where they were subjected to competition with local livestock for food and to poaching both by nomads all over the Sahel and by soldiers stationed in Chad.

According to anecdotal accounts, each small herd of scimitar-horned



The National Zoo's two newest oryx babies—born in July—get constant care from their attentive mothers.



The oryx, a species accustomed to a semi-desert climate, instinctively seems to prefer to sleep in the heat of the day.

oryx consists of both males and females, usually led by one adult male. Because this is not a common form of social organization in antelopes, one would be tempted to dismiss such accounts as misinterpretations by untrained observers, were it not for the fact that a similar herd organization has recently been reported in *Oryx gazella* in Tanzania. Dr. Fritz Walther, an experienced antelope observer, saw a male oryx rounding up both males and females in a herd, controlling the direction of movement of the group, and breaking up sparring matches between other males.

Oryx prefer to graze in the early morning and late afternoon. During the hottest part of the day they usually rest in whatever shade is available. Like many antelopes from arid regions, oryx do not need to drink every day, but get water from the plants they eat. In the wild, scimitar-horned oryx favor the tender green shoots of grasses and legumes, though they are known to eat wild bitter melons and the seed pods of acacia trees for moisture during the dry season. The National Zoo's

oryx are fed a balanced diet of grain, alfalfa pellets, and hay.

In the wild, oryx usually breed in October and November; after a nine-month gestation, each female gives birth to a single calf. In captivity, however, breeding may occur throughout the year, so at the Zoo and its Conservation and Research Center, males are allowed access to females only in the late summer and early fall to ensure that calves will be born during warm weather. Scimitar-horned oryx calves are solid fawn in color at birth, and gradually acquire the chestnut and white markings of the adults as they mature.

Although the scimitar-horned oryx is not as rare as the Arabian oryx, its populations have declined drastically. The International Union for the Conservation of Nature and Natural Resources officially classifies it as a "vulnerable" species. The "vulnerable" category includes species that are "believed likely to move into the endangered category in the near future if the causal factors now at work continue operating."

The scimitar-horned oryx once ranged throughout the Sahelian zone both north and south of the Sahara. Today it is extinct in the north, and in the south is reasonably abundant only in Chad. In 1936 a French naturalist reported seeing a herd of about 10,000 oryx in one part of Chad. Today the estimate for the entire country is less than 5,500 animals, and many of these are within a protected reserve.

The two most pressing dangers to the scimitar-horned oryx are the shrinking of its environment and poaching. The Sahel has been heavily

grazed by livestock for centuries, and many authorities believe that this led to the increase of the Sahara to its present size. Recently both drought and increased numbers of people and livestock have intensified this trend. According to one estimate, the Sahara is increasing by about 250,000 acres a year. Many of the Sahelian countries have dug permanent wells for their nomadic populations to water their livestock. These wells have been placed in grasslands previously inhabited only by wildlife. As a result, the oryx have had to move to poorer pastures.

Poaching is a very serious problem. Oryx meat has an excellent flavor, and can be dried and used in trading. When tanned, the hide can be fashioned into leather bags and durable shoe soles. The nomads of the Sahel attribute magical virtues to the oryx's curved horns.

Thus it is not surprising that the nomads hunt the scimitar-horned oryx. Worse, the poaching is difficult to control because of the lack of money and equipment and the large areas that have to be patrolled. John Newby, a British ecologist, believes that unless present efforts to protect the scimitar-horned oryx are intensified immediately, it will be gone from Chad within ten years.

The only real hope for the scimitar-horned oryx is the 77,950-square kilometer Ouadi Rimé-Ouadi Achim Faunal Reserve. However, this reserve can at best be considered only a stop-gap to the draining away of the oryx population. A faunal reserve is not a national park; it is managed for entirely different purposes. At Ouadi

Rimé-Ouadi Achim, there are, in addition to small herds of oryx, large herds of livestock that belong to the nomads—who feel no compunction about hunting the oryx in the process of caring for their own animals.

The scimitar-horned oryx breeds well in captivity, so it should be possible to maintain the species indefinitely in zoos, wild animal parks, and game ranches.

The scimitar-horned oryx is the only oryx species whose horns curve. It is white, and has reddish markings on head and neck that may extend back over its body.

The National Zoo obtained three scimitar-horned oryx in 1967, two females and a male. Because these animals have been so successful in breeding—both females produced calves this summer, just as they have for the past twelve years—there is not enough room at the Zoo to accommodate them all. Some have been sent to other zoos or to the Zoo's Conservation and Research Center at Front Royal,

Virginia, where they inhabit a grassy 30-acre enclosure. The Front Royal herd now consists of seven males and 17 females, including eight calves born this year.

The National Zoo's breeding program is making an important contribution in the effort to establish a self-sustaining captive population of the scimitar-horned oryx. It is sad that its future in the wild remains uncertain.



New Gorilla in Town

Melanie Bond

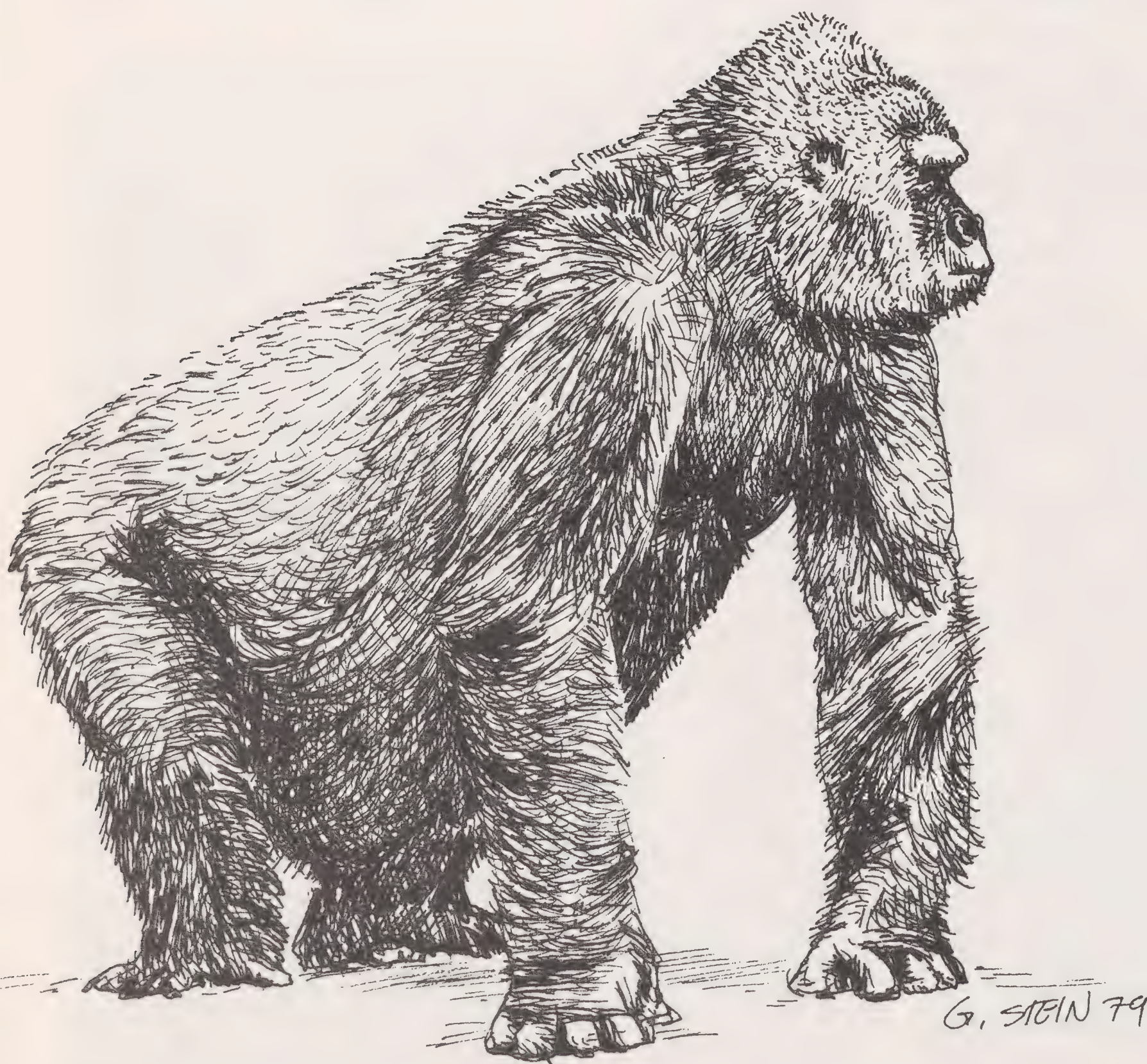
For the first time since M'geni Mopaya (Mopie) was born in 1972, the National Zoo has a new gorilla. Her

name is M'wasi, and she is here on loan from the New York Zoological Society, better known as the Bronx Zoo.

All new animals are quarantined, usually for about 30 days, when they arrive at a zoo, so their health may be checked and ensured. Great apes, though, arrive at the National Zoo so seldom that there are no special quarantine facilities for them. So M'wasi was kept isolated at one end of the ape line with an empty cage between her and the other apes until the veterinarians gave her a clean bill of health. As further precautions, keepers cleaned and fed M'wasi last and wore special protective clothing, including masks and gloves, when they were around her. Again, this was as much for her health as for theirs.

Although she is somewhat shorter and more rotund than the Zoo's Femelle, M'wasi is a very attractive gorilla. Humans see her facial expression as "sweet." The bony ridge up the middle of her head, called a sagittal crest, is impressive.

M'wasi is very interested in her new surroundings. She enjoys exploring her cage, peeping through the



M'wasi, the Zoo's newest gorilla, has come from the New York Zoological

Society to keep Tomoka (opposite) company.

MELANIE BOND is a keeper at the Small Mammal/ Great Ape House. She has been with the Zoo for six years, and worked with great apes for four. She was the first woman assigned to work with great apes at the National Zoo.

crack in the door, and playing with her rubber tub, her burlap sack, and the hay piled in her cage. Her disposition matches her expression; she has proven to be a gentle and cooperative animal, always eager for attention—particularly at feeding time. Her meals include kale, celery, apples, oranges, bananas, monkey chow, and—her favorite—green beans.

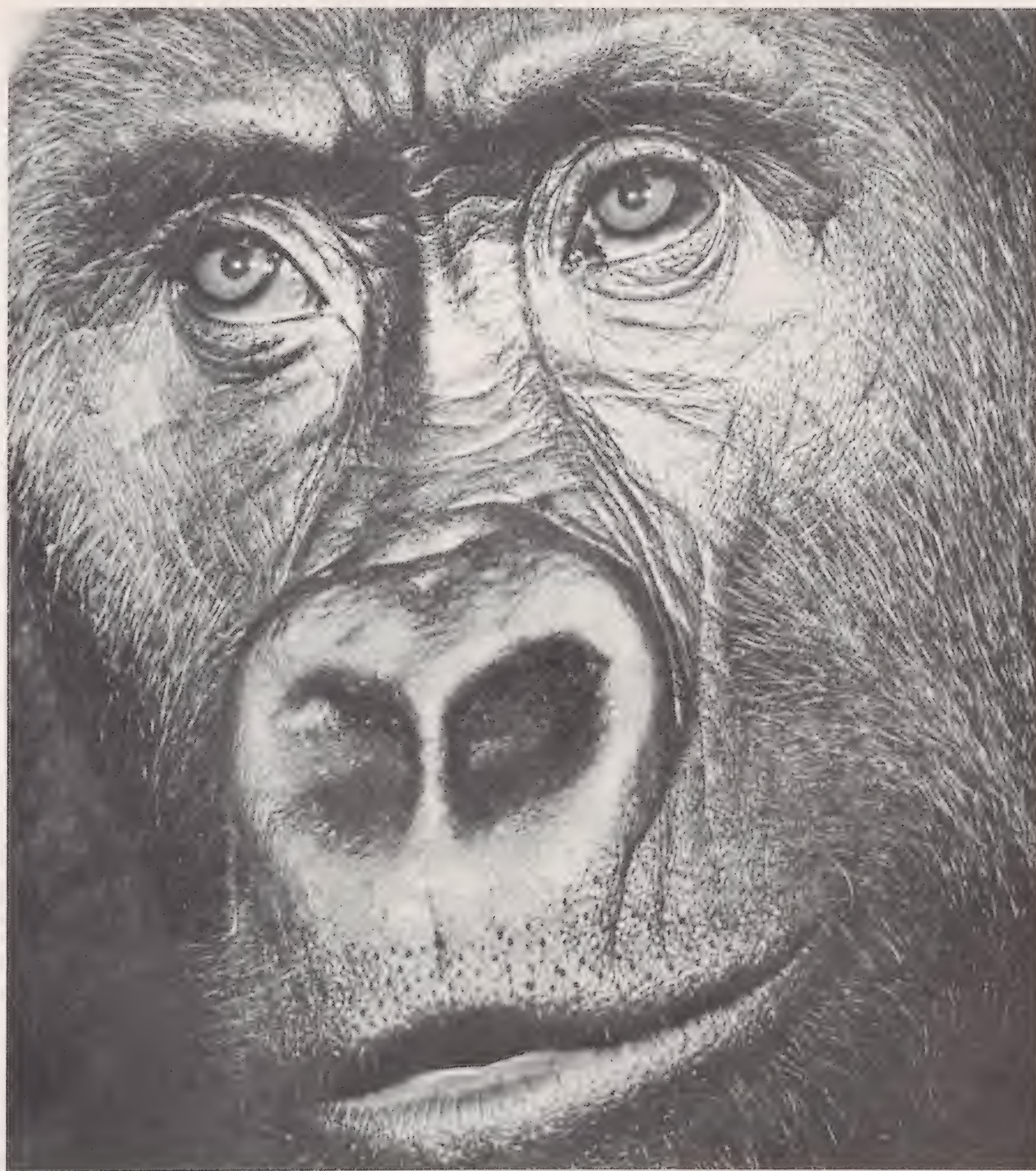
M'wasi was purchased from P.J. Zeehandelaar, a well-known animal dealer, in 1965, along with five other gorillas of about her age. Of these other five, four survive, one on breeding loan in Los Angeles and the others still at the Bronx Zoo.

M'wasi herself led an uneventful life until 1973, when she became pregnant. Unfortunate complications forced the Bronx Zoo to deliver the infant by Caesarian section, and it did not survive.

Although she still has a typical monthly estrous cycle, M'wasi has not conceived since her surgery. The Zoo is hoping for some breeding activity, but the main reason we got M'wasi was so that she could keep our 18-year-old male, Tomoka, company.

Tomoka was one of the first gorillas born in captivity in the United States. He has suffered from rheumatoid arthritis for most of his life. Because Zoo people are still not sure whether or not rheumatoid arthritis in gorillas is infectious, Tomoka has been kept separated from other gorillas for many years.

Thanks, though, to the continued cooperation between the NZP's veterinary staff and Dr. Thomas M. Brown and his associates at the



National Orthopedic Hospital in Arlington, Tomoka has shown no symptoms of his affliction for several years. In fact, he seems better, more active and interested in interacting socially with his keepers. We're hoping he'll feel the same way about M'wasi!

When M'wasi was released from quarantine, she was moved to a large

cage adjoining Tomoka's. They will be separated by a barred door while they get acquainted. When they appear to have established a friendly rapport, they will be allowed to meet—and perhaps they will found a new generation of NZP gorillas. □

FONZ NEWS

Beastly Pottery

Where can you put a rhino around your neck or find an elephant to sit on your casserole? At a unique FONZ art exhibit, "The Potter and the Beast," which will take place August 30 to October 5 in the lobby of the National Zoo's Education/Administration Building.

The exhibit of one-of-a-kind ceramic animal miniatures, which are fashioned as distinctive jewelry or adorn such functional art objects as jars and pots, will be open daily, 10 a.m. to 5 p.m.

The artist whose work is featured in "The Potter and the Beast" is Susan Greenleaf, a renowned sculptor and miniaturist who studied in San Antonio, Boston, and Switzerland before coming to Washington.

Large platters, small jars, casseroles, teapots, and plates, as well as jewelry, are the focus of Greenleaf's art. "Pottery has become the bones of my creative life," she says. "A pot at its simplest is just a vessel, but it can be much more—a sculpture or a painting or both. . . . And the animals; graceful, noble, elegant. . . . Since my childhood my life has largely been spent studying

animals and representing what I've seen in clay."

For more information about the opening of "The Potter and the Beast" and details about this unique FONZ exhibit, call 232-4047. □

New FONZ By-Laws

At a special meeting on May 23, 1979, FONZ members unanimously approved revisions to some of FONZ's by-laws.

The revisions were designed to increase the participation of members in the election of FONZ Directors.

Drafts of the proposed revisions were mailed to all FONZ members in April 1979, with members invited either to attend the special by-laws

This one-of-a-kind swan creamer is among the many hand-crafted objects on display and for sale in a new exhibit

meeting or to return their proxies to one of the members of our Executive Committee.

The revised by-laws establish new election procedures for Board membership, encourage nominations from the membership at large, provide for election of Board members by written ballot, and clarify the functions of the Board. Other amendments require that criteria for membership in the Board be published and permit write-in candidates.

The proposed revisions had been under review by the FONZ Board of Directors for two years before they were submitted to the membership for its approval. The new by-laws are consistent with the provisions of the D.C. Non-Profit Corporation Act. FONZ members wishing to receive copies of the new by-laws should call FONZ at 232-7700. □

in the Zoo's Education/Administration Building.



FONZ EVENTS

Cuban Adventure

Closed to American travellers for nearly two decades, Cuba is open again, and a special invitation to tour this lovely island has been extended to the members of FONZ.

The ten-day visit, scheduled for January 18-27, 1980, will include behind-the-scenes tours of the Havana Zoo and Cuban crocodile breeding farm; overnights in Cienfuegos and in Trinidad, the oldest (1514) city in Cuba; two relaxing days at the world-famous Varadero Beach (said to be the best in the Caribbean) for snorkeling and birdwatching; and one night and day in an unusual Indian village built over a beautiful lake.

Five days will be spent in Cuba's capital city, Havana, with visits to all major museums and sights, including the rarely-seen Hemingway Museum. Cuban officials are planning both a welcoming reception and a farewell party at the fabulous Tropicana nightclub.

The cost for this first-ever FONZ tour of Cuba will be \$990. The fee includes everything from air fare and first-class hotels to all meals, special receptions, admissions, local guides,



Havana's Morro Castle, relic of the days when Cuba was part of Spain, sports the more modern addition of a

nightclub performances, and much more!

Space is limited on this exciting tour, so interested members should

lighthouse. Headlines about Cuba's politics have obscured its other face—that of a beautiful tropical island.

call the office of the Executive Director at 232-7700 as soon as possible. □

Spring in Mongolia

Remote and rarely visited Mongolia will be an unusual part of a three-week FONZ tour of China in June 1980.

This travel adventure will start and end in the capital city of Peking with special visits to the Great Wall, the Imperial Palace (Forbidden City), the Ming Tombs, the Summer Palace, and, of course, the famous Peking Zoo with its breeding giant pandas.

At Huhehot—Inner Mongolia—the FONZ group will see what few Americans ever have—descendants of Genghis Khan demonstrating their prowess as horsemen in the colorful Mongolian Rodeo. There will be visits to nomadic Mongols in their yurts (animal-hide tents) and to Mongol communes and centers of industry.

Other once-in-a-lifetime sights will be Taiyuan, the 1,700-year-old capital of Shangxi Province; Tatong, where the Hua Yen Monastery houses the greatest Buddhist sculpture in the world; and the 21 caves of the Yunkang Grotto.

Optional side trips to other countries will be available as part of this tour.

Space is very limited on this unique expedition through Mongolia and China, so interested participants should act as soon as possible by contacting the office of FONZ's Executive Director at 232-7700. □

East African Safari

Explore one of Africa's great game areas on this FONZ safari to Tanzania in August 1980.

The three-week safari will provide an in-depth look at some of Africa's remarkable flora, fauna, and tribes. Its highlights will include game drives and overnights in the fabled Serengeti, which teems with millions of plains animals; a close-up look at herds of elephants and at the lions that sleep in trees at Lake Manyara; a picnic and all-day game drive in the spectacularly beautiful Ngorongoro

Crater; and a visit to the "Garden of Eden," Olduvai Gorge, where the first apes may have become human.

Participants will be entertained at private receptions, talk with game wardens and noted wildlife experts, experience the thrill of night game drives, and stay at luxury tent camps and lodges. One site overlooks snow-capped Mt. Kilimanjaro!

The all-inclusive price of \$2,900 includes overnight stopovers and a tour of London, special briefings throughout, and a FONZ or Zoo leader assisted by a professional safari guide and wildlife expert.

To know Hemingway's Africa, you must see Tanzania. It really is still "on the wild side"! □



The Great Wall of China is the only human structure that is visible from the moon. A few lucky FONZ members

will be able to stroll the top of the Great Wall on a special tour in June 1980.

BOOK NEWS

A Natural Selection

Loren Eiseley, *Darwin and the Mysterious Mr. X*, edited by **Kenneth Heuer** (NY: E.P. Dutton Company), 1979.

The popular imagination likes to conceive of great scientific breakthroughs springing to life complete and fully fleshed, as Athena sprang a grown woman from the cracked skull of Zeus. There is something both pleasurable and romantic in thinking about Aristotle suddenly differentiating between weight and mass as he lowers himself naked into his bath, or Sir Isaac Newton producing the theory of gravitation, full-blown, after an apple falls on his head.

The truth is, of course, that great discoveries do not occur in a vacuum. They are almost invariably based on years of patient work built on a foundation of other people's thought.

Darwin and the theory of natural selection are no exception. The romantic imagination likes to conceive of Darwin sailing off in the *Beagle*, and *voilà!* In fact, Darwin set out on his four-year voyage on December 27, 1831, and did not publish *Origin of Species* until late in 1859.

During those 28 years he worked steadily and secretively, accumulating great masses of data. His dream was to present his theory in a book "so large that it would certainly have fallen dead and unreadable from the press."

Indeed, the only reason *Origin of Species* reached publication was that in 1858 Alfred Russell Wallace, a young and rather naive naturalist, sent Darwin an article on evolution of his own and asked for a critique of it before publication.

Darwin and Wallace announced their theory together before the Linnean Society, and Darwin published *Origin of Species* the next year. Now Darwin is remembered and the generous Wallace all but forgotten.

Loren Eiseley's *Darwin and the Mysterious Mr. X* is a posthumous collection of essays on what might be called the evolution of Darwinism. The first section of the book, "The Dancers in the Ring," sets Darwin's achievement into its proper historical context.

The most startling essay is the fourth, "Charles Darwin, Edward Blyth, and the Theory of Natural Selection." In it, Eiseley points out that between 1835 and 1837, Edward Blyth, "the mysterious Mr. X," published articles on both natural and sexual selection—predating Darwin by more than twenty years! Eiseley demonstrates that Darwin knew about the articles, read them, and used them as references—but that in neither *Origin of Species* nor *The Descent of Man* did Darwin credit Blyth for his ideas.

The mystery deepens even further when one learns that Darwin and Blyth were good friends, and admired each other's work.

Both Blyth and Darwin worked in an atmosphere in which the biblical account of creation was accepted as fact. Unlike Darwin, Blyth could not make himself realize that natural selection was not confined to the dim mists of the far past, but is ongoing. Blyth used the idea of natural selection "as a conservative teleological device for maintaining the stability of the natural world." It took Darwin to make the mental leap to the deduction that no life form is fixed or immutable, that all species either evolve or die.

The real mystery is why Darwin gave Blyth no credit. In "Darwin, Coleridge, and the Theory of Unconscious Creation," Eiseley attempts to explain this by ascribing Darwin's thinking to "the dark domain of demonic creation." This is not as convincing, though, as a sentence he quotes from Darwin's autobiography: "It is clear that I failed to impress my readers; and he who succeeds in doing so deserves, in my opinion, all the credit." In other words, Darwin may have reasoned that since in 1837 Blyth "failed to impress" his readers, Darwin deserved "all the credit" when he *did* impress his readers in 1859—the entire first edition of *Origin of Species* was sold out in one

The three first essays of *Darwin and the Mysterious Mr. X* set the stage for the central two about Blyth. "Charles Darwin" outlines Darwin's character and traces the development of his work. "Alfred Russell Wallace" discusses the shy, frail naturalist who came so close to beating Darwin to

the punch in 1858. "Charles Lyell" is a biographical sketch about the founder of modern geology and his influence on Darwin.

The next section of the book contains reprints of those of Blyth's essays on which Darwin must have based his work. As Heuer says, "Blyth's articles . . . enable a reader to delve into the documentary evidence Eiseley uncovered; without them, [Eiseley's] conclusions would be almost incredible."

The third section, a biographical memoir of Blyth by his friend Arthur Grote, testifies to Blyth's brilliance and shows how it was forced under a bushel by poverty and hampered by both ill health and the cavalier treatment he had from his employers.

Poor Mr. X! It seems to show that genius, like any flowering plant, needs the right soil, light, and nourishment to survive. If Blyth, like Darwin, had been born and reared a "gentleman idler," how different might history have been!

The final section of *Darwin and the Mysterious Mr. X* is entitled "The Evolution of Man," and deals only peripherally with Darwin—Eiseley comments, "An honest biographer must record the fact that man was not Darwin's best subject. . . no man afflicted with a weak stomach and insomnia has any business investigating his own kind." The three essays of this section, each fascinating, are "Neanderthal Man and the Dawn of Human Paleontology," "The Intellectual Antecedents of *The Descent of Man*," and "The Time of Man."

If Eiseley had not been a scientist, he would have had to be a poet. Even writing as he was with these essays for scientific and scholarly audiences, he was incapable of pomposity.

Here is Eiseley on human evolution:

If the record of the rocks had never been . . . still man would have wondered. . . It is a troubling thing to be a man, with a very special and assured position in the cosmos, and still to feel those amused little [simian] eyes in the bush. . . eyes so maddeningly like our own.

And defining a human being:

You are really an illusion, one of innumerable shadows in the dying fires of a mysterious universe.

Darwin and the Mysterious Mr. X is, like all Eiseley's work, engrossing, illuminating, and elegantly written. For those readers interested in the historical context of Darwinism or in evolution in general, this is a book to be kept, reread, and pondered. □

OPPOSITE, left to right: SuperZoodle, Julie Washburn, The Hippopotamus, and Julian Gooding were four of the many stars in the 1979 junior zoo aide program. The animal-themed puppet shows were staged by junior members of FONZ.

BACK COVER: Flamingoes eat with their heads upside-down, and their rest position, like the stork's, is standing on one leg. Humans eat right-side-up, but have been known to stand on one leg while watching Zoo flamingoes.

CALENDAR

- 30 (Thursday)
Bookstore/Gallery art exhibit opens.
"The Potter and the Beast"

SEPTEMBER

- 15 (Saturday)
Front Royal Trip
- 22 (Saturday)
Osa and Martin Johnson Film Retrospective
- 24 (Monday)
Audubon Lecture
"Bats—Myth and Reality"
- 29 (Saturday)
Fall classes begin.

OCTOBER

- 5 (Friday)
Assateague Trip
- 13 (Saturday)
Prince William Forest Park Hike
- 15 (Monday)
Audubon Lecture
"Orangutans—Indonesia's People of the Forest"
- 20 (Saturday)
FONZ Tour of the Zoo
- 25 (Thursday)
Annual Meeting
- 27 (Saturday)
Overnight Chesapeake Bay Canoe Trip

NOVEMBER

- 3 (Saturday)
Blackwater Wildlife Refuge Trip
- 19 (Monday)
Audubon Lecture
"The Secret Life of Some Sea Urchins"

For more information call
FONZ at 232-7700.

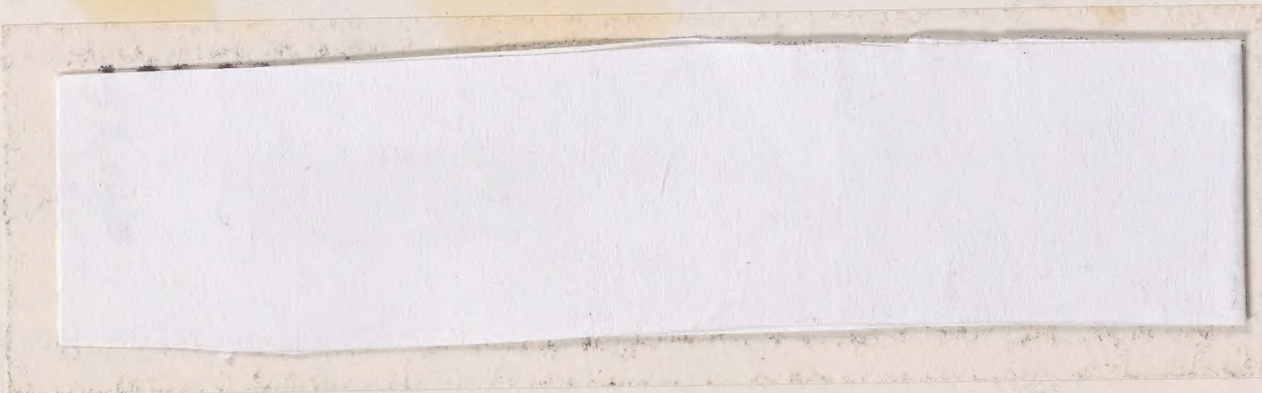




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